

# PATENT COOPERATION TREATY

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PCT/CA2004/000744

From the INTERNATIONAL BUREAU

## PCT

NOTIFICATION CONCERNING  
TRANSMITTAL OF COPY OF INTERNATIONAL  
APPLICATION AS PUBLISHED OR REPUBLISHED

To:

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Date of mailing ( <i>day/month/year</i> ) 24 March 2005 (24.03.2005)		<b>IMPORTANT NOTICE</b>	
Applicant's or agent's file reference			
International application No. PCT/CA2004/000744	International filing date ( <i>day/month/year</i> ) 14 May 2004 (14.05.2004)	Priority date ( <i>day/month/year</i> ) 15 May 2003 (15.05.2003)	
Applicant FISENKO, Anatoliy			

The International Bureau transmits herewith the following documents:

- ☐ copy of the international application as published by the International Bureau on under No. WO
- ☒ copy of international application as republished by the International Bureau on 24 March 2005 (24.03.2005) under No. WO 2004/101447  
For an explanation as to the reason for this republication of the international application, reference is made to INID codes (15), (48) or (88) (*as the case may be*) on the front page of the attached document.

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,

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Declarations under Rule 4.17:

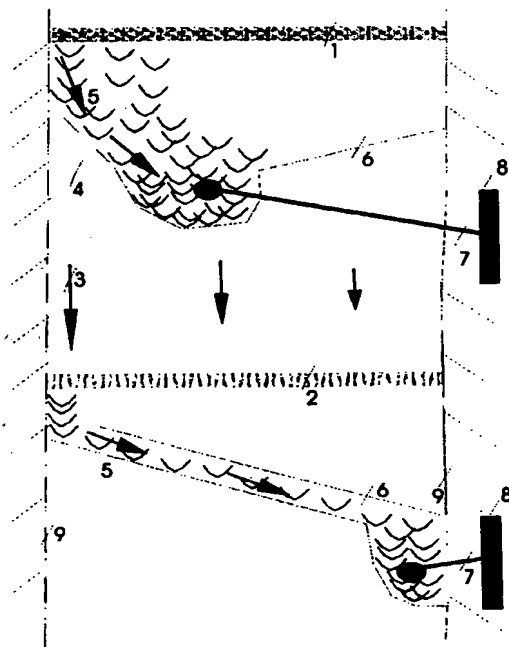
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations
- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report

[Continued on next page]

(54) Title: A METHOD OF INDUCED FROTH (FOAM) FORMATION PROCESS AND NATURAL PURIFICATION



(57) Abstract: A method of induced froth (foam) formation and natural purification from pollutants or contaminants for water treatment, wastewater treatment, clean-up of polluted sites of streams directly on site, clean-up of contaminated sites and any other reasons is proposed. The method utilizes the proper selected food for degrading and decomposing activities by groups of fungi, bacteria and other microorganisms which are the most resistant to the kinds of contaminants or pollutants from which water, wastewater and polluted or contaminated sites are treated or cleaned-up. While the decomposition takes place, the entire water and/or benthic soil are enriched with biological surfactants and the generated dissolved biogases and micro-bubbles of biogases. Further, the water, wastewater and polluted or contaminated sites also contain the dissolved air and all kinds of polluting particles, including man-made surfactants. By creating the proper external and/or internal conditions for forming biogases and/or air micro-bubbles and bubbles-particles aggregates in the presence of biological and/or man-made surfactants, the latter rise to the water surface and concentrate in froth and a surrounding thin top layer of surface water. The froth and surrounding thin top layer of surface water collect the contaminants or pollutants, including organic and inorganic particles with pathogens from the entire water and/or benthic soil. The froth and surrounding thin top layer of surface water are concentrated and localized in the proper designed places by any devices or equipments for further skimming off for disposal and/or redirecting to artificially created places for natural treatment directly on site and/or delivering to municipal or natural treatment

WO 2004/101447 A1

facilities.



— *with amended claims*

**(15) Information about Correction:**

see PCT Gazette No. 12/2005 of 24 March 2005, Section II

**(88) Date of publication of the revised international search report:**

24 March 2005

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

**Date of publication of the amended claims:** 6 January 2005

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/CA2004/000744

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 C02F3/24 C02F7/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C02F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 496 729 A (ISKRA ANTON) 25 June 1982 (1982-06-25) page 1, line 7 - line 12 page 3, line 27 - line 36 page 5, line 14 - line 24 page 6, line 4 - line 12 page 9, line 27 - page 10, line 18	1-7
X	DE 32 08 055 A (CHARCENKO MICHAEL SERGEEVIC; ISKRA ANTON LEONTEVIC; MOROZOV VJACESLAV) 15 September 1983 (1983-09-15) page 6, line 13 - line 16 page 10, line 34 - page 11, line 6	1-7
X	DE 26 46 795 A (POEPEL FRANZ PROF DR ING HABIL) 20 April 1978 (1978-04-20) page 7, last paragraph - page 8	1-7
-/-		

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

17 September 2004

Date of mailing of the international search report

24/09/2004

Name and mailing address of the ISA

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# INTERNATIONAL SEARCH REPORT

International Application No.  
PCT/CA2004/000744

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 945 918 A (KIRK BRADLEY S) 23 March 1976 (1976-03-23) column 6, line 52 - column 7, line 18	1-7
X	US 5 223 130 A (VALFRIDO ANGIOLIN) 29 June 1993 (1993-06-29) abstract	1-7
A	PATENT ABSTRACTS OF JAPAN vol. 017, no. 321 (C-1072), 18 June 1993 (1993-06-18) & JP 05 031494 A (SHIMIZU CORP), 9 February 1993 (1993-02-09) abstract	1-7

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/CA2004/000744

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 1-7(partially)  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 1-7(partially)

Present claims 1-7 relate to an extremely large number of possible methods. In fact, the claims contain so many options, variables, possible permutations and provisos that a lack of clarity (and conciseness) within the meaning of Article 6 PCT arises to such an extent as to render a meaningful search of the claims impossible. Consequently, the search has been carried out for those parts of the application which do appear to be clear (and concise), namely a method for the treatment of contaminated waters by creating a shallow-turbulent stream through water cascading over weirs, waterfalls and other obstacles and concentrating the formed froth in designed places for further skimming off for disposal as indicated on page 2, lines 36-50 of the description.

The claims cover all methods of producing froth in all possible environments, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such methods/apparatus. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. The claims also lack clarity (Article 6 PCT) as indicated above. An attempt is made to define the method by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.5), should the problems which led to the Article 17(2) declaration be overcome.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/CA2004/000744

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2496729	A	25-06-1982	FR 2496729 A1	25-06-1982
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